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EXAMINER	
WEST, JEFFREY R	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,912	Applicant(s) CHARARA ET AL.	
	Examiner Jeffrey R. West	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 September 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 28, 2010, has been entered.

Drawings

3. The drawings in Figures 1, 4, and 5 are objected to because they do not have sufficiently descriptive labels, specifically, blank boxes in drawings should be labeled descriptively unless it is a well-known component.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3, and 6-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al., “Experimental studies of electrokinetic conversions in fluid-saturated borehole models” in view of U.S. Patent No. 6,470,275 to Dubinsky (incorporating by reference U.S. Patent No. 5,001,675 to Woodward).

With respect to claim 1, Zhu discloses a method for evaluating permeability of a formation with a logging tool positioned within a borehole surrounded by the formation (page 1350, column 1, lines 14-22 and Figure 1) the method comprising: exciting with a logging tool the formation with an acoustic wave propagating into the formation (page 1350, column 2, lines 5-15) causing a seismic displacement of an electrolyte (page 1349, abstract, lines 36-39 and page 1349, column 1, line 1 to column 2, line 2); measuring with the logging tool a seismo-electromagnetic signal produced by the seismic displacement of the electrolyte within the formation (page 1350, column 2, lines 5-15); exciting with a logging tool the formation with an electromagnetic exciting field (page 1349, abstract, lines 1-4 and page 1350, column 1, line 42 to column 2, line 5) causing the electrolyte to also be displaced (page 1349, abstract, lines 36-39 and page 1349, column 1, line 1 to column 2, line 2);

measuring with the logging tool an electromagneto-seismic signal produced by the electromagnetic exciting field within the formation (page 1349, abstract, lines 1-4 and page 1350, column 1, line 42 to column 2, line 5); and analyzing the measured seismo-electromagnetic signal and the measured electromagneto- seismic signal to evaluate the permeability of the formation (page 1349, abstract, lines 24-27, page 1349, column 2, lines 3-5, and page 1355, column 1, line 4 to column 2, line 4).

As noted above, the invention of Zhu teaches many of the features of the claimed invention and while the invention of Zhu does teach both acoustic and electromagnetic excitation as well as both seismo-electromagnetic and electromagento-seismic measurements with analysis and comparison of the two different results (Zhu; page 1350, column 2, lines 5-7) as part of a permeability analysis, Zhu is silent as to employing both excitations and both receptions on the same logging tool.

Dubinsky discloses a method for characterizing a formation with a logging tool positioned within a borehole surrounded by the formation (column 4, lines 29-42, column 4, line 65 to column 5, line 24, and column 5, lines 59-65) the method comprising: exciting with the logging tool the formation with an acoustic wave propagating into the formation (column 6, lines 36-47); measuring a seismo-electromagnetic signal produced by the acoustic wave within the formation (column 6, lines 36-47); exciting the formation with an electromagnetic exciting field (column 6, lines 5-15); measuring an electromagneto-seismic signal produced by the electromagnetic exciting field within the formation (column 6, lines 5-15); analyzing

the measured seismo-electromagnetic signal and the measured electromagneto-seismic signal to evaluate characterizing parameters of the formation (column 6, lines 15-18 and 45-52).

Dubinsky also discloses a system for characterizing a formation surrounding a borehole (column 4, lines 29-42, column 4, line 65 to column 5, line 24, and column 5, lines 59-65), the system comprising: a logging tool to be lowered into the borehole (column 1, lines 9-18 and column 4, line 59 to column 5, line 23); an acoustic emitter located onto the logging tool (column 6, lines 40-44 and Figure 2), the acoustic emitter allowing to excite the formation with an acoustic wave propagating within the formation (column 6, lines 36-47); an electromagnetic receiver to measure a seismo-electromagnetic signal produced by the acoustic wave within the formation (column 6, lines 5-15); an electromagnetic emitter located onto the logging tool (column 6, lines 8-12 and Figure 1), the electromagnetic emitter allowing to excite the formation with an electromagnetic exciting field (column 6, lines 5-15); an acoustic receiver to measure a electromagneto-seismic signal produced by the electromagnetic exciting field within the formation (column 6, lines 36-47); processing means to analyze the measured seismo-electromagnetic signal and the measured electromagneto-seismic signal so as to evaluate characterizing parameters of the formation (column 6, lines 15-18 and 45-52).

It would have been obvious to one having ordinary skill in the art to modify the invention of Zhu to explicitly include employing both excitations and both receptions on the same logging tool, as taught by Dubinsky, because Zhu does teach both

acoustic and electromagnetic excitation as well as both seismo-electromagnetic and electromagento-seismic measurements with analysis and comparison of the two different results (Zhu; page 1350, column 2, lines 5-7) as part of a permeability analysis and, as suggested by Dubinsky, the combination would have improved the system of Zhu by providing a logging tool with a plurality of sources and receivers to allow for the measurement of a plurality of different characteristics while reducing the cost and complexity of having to employ a plurality of different, distinct, logging tools (column 4, lines 43-52 and column 6, lines 36-58).

With respect to claim 3, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses measuring an acoustic response signal, the acoustic response signal being produced by the acoustic exciting; estimating acoustic properties of the formation from the acoustic response signal (page 1350, column 2, lines 5-15 and page 1351, column 1, line 9 to column 2, line 9); measuring an electromagnetic response signal, the electromagnetic response signal being produced by the electromagnetic exciting; estimating electromagnetic properties of the formation from the electromagnetic response signal (page 1349, abstract, lines 1-4 and page 1350, column 1, line 42 to column 2, line 5 and page 1351, column 1, line 9 to column 2, line 9).

With respect to claim 6, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the analyzing takes into

consideration propagating of the acoustic wave within the formation (page 1354, column 1, lines 29-43).

With respect to claim 7, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the seismo-electromagnetic signal is a seismo-electric signal (page 1350, column 2, lines 5-15 and page 1349, abstract, lines 1-16).

With respect to claim 8, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the seismo-electromagnetic signal is a seismo-magnetic signal (page 1350, column 2, lines 5-15 and page 1349, abstract, lines 1-16)

With respect to claim 9, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the electromagneto-seismic signal is a magneto-seismic signal (page 1349, abstract, lines 1-16 and page 1350, column 1, line 42 to column 2, line 5).

With respect to claim 10, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the electromagneto-seismic signal is an electro-seismic signal (page 1349, abstract, lines 1-16 and page 1350, column 1, line 42 to column 2, line 5).

With respect to claim 11, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses displacing the logging tool along the borehole so as to provide a continuous characterizing of the formation as a function of depth (page 1350, column 1, lines 14-30 and 47-48).

With respect to claim 12, Zhu discloses a system for evaluating permeability of a formation surrounding a borehole, the system comprising: a logging tool to be lowered into the borehole (page 1350, column 1, lines 14-30 and 47-48 and Figure 1); an acoustic emitter located onto a logging tool (page 1350, column 1, lines 14-30 and 47-48 and Figure 1), the acoustic emitter allowing to excite the formation with an acoustic wave propagating within the formation (page 1350, column 2, lines 5-15) causing a seismic displacement of an electrolyte (page 1349, abstract, lines 36-39 and page 1349, column 1, line 1 to column 2, line 2); an electromagnetic receiver to measure a seismo-electromagnetic signal produced by the seismic displacement of the electrolyte within the formation (page 1350, column 2, lines 5-15); an electromagnetic emitter located onto a logging tool (page 1350, column 1, lines 14-30 and 47-48 and Figure 1), the electromagnetic emitter allowing to excite the formation with an electromagnetic exciting field (page 1349, abstract, lines 1-4 and page 1350, column 1, line 42 to column 2, line 5) causing the electrolyte to also be displaced (page 1349, abstract, lines 36-39 and page 1349, column 1, line 1 to column 2, line 2); an acoustic receiver to measure a electromagneto-seismic signal produced by the electromagnetic exciting field within the formation (page 1349, abstract, lines 1-4 and page 1350, column 1, line 42 to column 2, line 5); processing means to analyze the measured seismo-electromagnetic signal and the measured electromagneto-seismic signal so as to evaluate the permeability of the formation

(page 1349, abstract, lines 24-27, page 1349, column 2, lines 3-5, and page 1355, column 1, line 4 to column 2, line 4).

As noted above, the invention of Zhu teaches many of the features of the claimed invention and while the invention of Zhu does teach both acoustic and electromagnetic excitation as well as both seismo-electromagnetic and electromagento-seismic measurements with analysis and comparison of the two different results (Zhu; page 1350, column 2, lines 5-7) as part of a permeability analysis, Zhu is silent as to employing both excitations and both receptions on the same logging tool.

Dubinsky discloses a method for characterizing a formation with a logging tool positioned within a borehole surrounded by the formation (column 4, lines 29-42, column 4, line 65 to column 5, line 24, and column 5, lines 59-65) the method comprising: exciting with the logging tool the formation with an acoustic wave propagating into the formation (column 6, lines 36-47); measuring a seismo-electromagnetic signal produced by the acoustic wave within the formation (column 6, lines 36-47); exciting the formation with an electromagnetic exciting field (column 6, lines 5-15); measuring an electromagneto-seismic signal produced by the electromagnetic exciting field within the formation (column 6, lines 5-15); analyzing the measured seismo-electromagnetic signal and the measured electromagneto-seismic signal to evaluate characterizing parameters of the formation (column 6, lines 15-18 and 45-52).

Dubinsky also discloses a system for characterizing a formation surrounding a borehole (column 4, lines 29-42, column 4, line 65 to column 5, line 24, and column 5, lines 59-65), the system comprising: a logging tool to be lowered into the borehole (column 1, lines 9-18 and column 4, line 59 to column 5, line 23); an acoustic emitter located onto the logging tool (column 6, lines 40-44 and Figure 2), the acoustic emitter allowing to excite the formation with an acoustic wave propagating within the formation (column 6, lines 36-47); an electromagnetic receiver to measure a seismo-electromagnetic signal produced by the acoustic wave within the formation (column 6, lines 5-15); an electromagnetic emitter located onto the logging tool (column 6, lines 8-12 and Figure 1), the electromagnetic emitter allowing to excite the formation with an electromagnetic exciting field (column 6, lines 5-15); an acoustic receiver to measure a electromagneto-seismic signal produced by the electromagnetic exciting field within the formation (column 6, lines 36-47); processing means to analyze the measured seismo-electromagnetic signal and the measured electromagneto-seismic signal so as to evaluate characterizing parameters of the formation (column 6, lines 15-18 and 45-52).

It would have been obvious to one having ordinary skill in the art to modify the invention of Zhu to explicitly include employing both excitations and both receptions on the same logging tool, as taught by Dubinsky, because Zhu does teach both acoustic and electromagnetic excitation as well as both seismo-electromagnetic and electromagento-seismic measurements with analysis and comparison of the two different results (Zhu; page 1350, column 2, lines 5-7) as part of a permeability

analysis and, as suggested by Dubinsky, the combination would have improved the system of Zhu by providing a logging tool with a plurality of sources and receivers to allow for the measurement of a plurality of different characteristics while reducing the cost and complexity of having to employ a plurality of different, distinct, logging tools (column 4, lines 43-52 and column 6, lines 36-58).

With respect to claim 13, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the electromagnetic receiver is an electric receiver allowing to measure a seismo-electric signal produced by the acoustic wave within the formation (page 1350, column 2, lines 5-15 and page 1349, abstract, lines 1-16).

With respect to claim 14, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the electromagnetic receiver is a magnetic receiver allowing to measure a seismo-magnetic signal produced by the acoustic wave within the formation (page 1350, column 2, lines 5-15 and page 1349, abstract, lines 1-16).

With respect to claim 15, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the electromagnetic emitter is an electric emitter allowing excite the formation with an electric exciting field (page 1349, abstract, lines 1-16 and page 1350, column 1, line 42 to column 2, line 5).

With respect to claim 16, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses that the electromagnetic emitter is a magnetic emitter allowing excite the formation with a magnetic exciting field (page 1349, abstract, lines 1-16 and page 1350, column 1, line 42 to column 2, line 5).

With respect to claim 17, the combination of Zhu and Dubinsky teaches all of the features as set forth above, and further Zhu discloses at least one additional electromagnetic receiver (i.e. a plurality of receiving electrodes) (Figure 1); at least one additional acoustic receiver (i.e. a plurality of receiving hydropohones) (page 1350, column 2, lines 5-7 and Figure 1).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu in view of Dubinsky and further in view of U.S. Patent No. 5,809,458 to Tamarchenko.

As noted above, the invention of Zhu and Dubinsky teaches many of the features of the claimed invention and while Zhu and Dubinsky does teach characterizing a formation with a logging tool based on seismo-electromagnetic and electromagneto-seismic signals, the combination does not explicitly include means for generating a synthesized signal based on inversion parameters.

Tamarchenko teaches a method for simulating the response of a through-casing electrical resistivity well logging instrument and its application to determining resistivity of earth formations comprising selecting initial values of inversion parameters (column 8, lines 13-18 and column 9, lines 20-31); synthesizing a

synthesis electric signal (column 3, line 47 to column 4, line 5) using the initial values of the inversion parameters (column 8, lines 44-48); calculating a difference between the synthesis electric signal and the measured electric signal (column 9, lines 6-12), adjusting the values of the inversion parameters according to the difference (column 9, lines 12-14); repeating the synthesizing using the adjusted values of the inversion parameters, the calculating of the difference, and the adjusting until the difference drops below a predetermined threshold (column 9, lines 14-20).

It would have been obvious to one having ordinary skill in the art to modify the invention of Zhu and Dubinsky to explicitly include means for generating a synthesized signal based on inversion parameters, as taught by Tamarchenko, because, as suggested by Tamarchenko, the combination would have improved the system of Zhu and Dubinsky by simulating a response of the well logging tool of Zhu and Dubinsky for comparison to actual measurements in order to determine specific geological structures of the earth formations in a method that ensures accuracy by calibrating the system to desired parameters (column 1, lines 47-58 and column 9, lines 6-20).

Further, since the invention of Zhu and Dubinsky does teach characterizing a formation with a logging tool based on both seismo-electromagnetic and electromagneto-seismic signals, the combination would have performed the synthesis for each of the seismo-electromagnetic and electromagneto-seismic signals.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu in view of Dubinsky and Tamarchenko and further in view of U.S. Patent No. 5,841,280 to Yu et al. and U.S. Patent No. 6,351,991 to Sinha.

As noted above, the invention of Zhu, Dubinsky, and Tamarchenko teaches many of the features of the claimed invention and while the invention of Zhu, Dubinsky, and Tamarchenko does teach generating synthesized seismo-electromagnetic and electromagneto-seismic signals based on inversion parameters, the combination is not explicit as to what constitutes the inversion parameters.

Yu teaches an apparatus and method for combined acoustic and seismoelectric logging measurements comprising means for calculating a synthetic seismoelectric signal (column 10, lines 31-33) based on inversion parameters of electrokinetic coupling coefficient (column 8, lines 32-36) and mobility (column 7, lines 39-42).

It would have been obvious to one having ordinary skill in the art to modify the invention of Zhu, Dubinsky, and Tamarchenko to specify the inversion properties of an electrokinetic coupling coefficient and mobility, as taught by Yu, because, as suggested by Yu, electriokinetic coupling and mobility are important parameters for properly modeling a seismic signal and, therefore, the combination would have improved the synthesizing and, consequently, the resulting determination of formation characteristics in Zhu and Tamarchenko by setting such important parameters as initial values (column 7, lines 39-42 and column 8, lines 32-36).

As noted above, the invention of Zhu, Dubinsky, Tamarchenko, and Yu teaches many of the features of the claimed invention and while the invention of Zhu, Dubinsky, Tamarchenko, and Yu does teach generating synthesized seismo-electromagnetic and electromagneto-seismic signals based on inversion parameters of an electrokinetic coupling coefficient and mobility, the combination does not specify simplifying the synthesizing by synthesizing only slow longitudinal signals.

Sinha teaches determining stress parameters of formations from multi-mode velocity data including means for determining formation parameters by inversion (column 5, lines 10-15) to model transmission/reception seismic velocities (column 5, lines 16-27) wherein the modeling is simplified by synthesizing each of a plurality of modes individually, including a single mode of slow longitudinal signals (column 4, lines 5-9 and column 5, lines 28-49)

It would have been obvious to one having ordinary skill in the art to modify the invention of Zhu, Dubinsky, Tamarchenko, and Yu to specify simplifying the synthesizing by synthesizing only slow longitudinal signals, as taught by Sinha, because, as suggested by Sinha, the combination would have improved the synthesis of Zhu, Dubinsky, Tamarchenko, and Yu by providing individual synthesis per mode thereby reducing the complexity and, consequently, providing greater accuracy by reducing the chance of error (column 4, lines 5-9 and column 5, lines 28-49).

Response to Arguments

8. Applicant's arguments with respect to claims 1 and 3-17 have been considered but are moot in view of the new ground(s) of rejection.

The following arguments, however, are noted.

Applicant argues:

> Applicant respectfully disagrees with the Examiner's objection regarding the drawings. Each blank box of Figures 1 and 4 is numbered. Figure 5 is labeled and is easily understood by the skilled reader.

The Examiner asserts that per MPEP § 608.02 (n)(o), “symbols which are not universally recognized may be used, subject to approval by the Office, if they are not likely to be confused with existing conventional symbols, and if they are readily identifiable” and “descriptive legends may be used subject to approval by the Office, or may be required by the examiner where necessary for understanding of the drawing”. The Examiner asserts that the blank boxes in Figures 1, 4, and 5 are not universally recognized and should be provided with descriptive legends to aid in understanding of the drawing.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

U.S. Patent No. 5,955,884 to Payton et al. teaches a method and apparatus for measuring transient electromagnetic and electrical energy components propagated in an earth formation comprising means for receiving a seismo-magnetic seismo-electromagnetic signal (column 8, lines 18-24) and/or an electro-seismic

electromagneto- seismic signal (column 8, lines 24-29) and additionally teaches wherein an electromagnetic receiver is an electric receiver allowing to measure a seismo-electric signal produced by the acoustic wave within the formation (column 8, lines 9-43) and that the electromagnetic emitter is an electric emitter allowing excite the formation with an electric exciting field (column 7, lines 28-53).

U.S. Patent Application Publication No. 2002/0188407 to Khan teaches mapping permeable reservoir formations by measuring the elastic nonlinear interactions of a seismic wave as it propagates through the reservoir rock matrix and its pore fluids.

U.S. Patent No. 4,964,101 to Liu et al. teaches method for determining fluid mobility characteristics of earth formations.

Mikhailov et al., “Using borehole electroseimic measurements to detect and characterize fractured (permeable) zones” teaches methods and apparatuses to detect permeable zones.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Eliseo Ramos-Feliciano can be reached on (571)272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey R. West/
Primary Examiner, Art Unit 2857

February 3, 2010